NATIONAL COMMITTEE FOR THE PREVENTION OF BLINDNESS, INC.

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METHODS OF TEACHING SIGHT-SAVING CLASSES

By ESTELLA LAWES

SIGHT-SAVING CLASSES, CINCINNATI, OHIO

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FOREWORD

In 1919 the National Committee for the Prevention of Blindness published a Manual for Conservation of Vision Classes. This contained a summary of the principles of sight-saving class work as then understood. During the intervening seven years many new classes have been organized and experience has brought about a number of changes which have met with general approval. The work of sight-saving classes is, however, still in the beginning and the years to come will probably bring still more changes.

The present needs seem to indicate a division of the subject into two parts, one dealing with information necessary for those interested in the establishment of classes and the administrative side of the work, the other with methods of teaching for those actually engaged in the class work.

This publication on methods of teaching has been prepared by Miss Estella Lawes, who is in charge of sight saving classes in the public schools of Cincinnati. Miss Lawes wishes to acknowledge her indebtedness to the following for help in preparing the manuscript: The teachers attending the course for training in sight-saving class work given by the University of Cincinnati during the summer of 1925; the teachers of sight-saving classes in the Cincinnati schools; Miss Dorothy Breuer, for her painstaking work in the preparation of illustrations of programs; Miss Alice V. Burdge, her associate, and the members of the staff of the National Committee for the Prevention of Blindness.

Miss Lawes and the National Committee for the Prevention of Blindness will welcome suggestions and criticism which may be used in revising the present text.

This publication will be followed in the near future by another dealing with the establishment and administration of sight-saving classes.

NATIONAL COMMITTEE FOR THE
PREVENTION OF BLINDNESS

LEWIS H. CARRIS
Managing Director

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INTRODUCTION

The ideas embodied in this pamphlet are a direct outgrowth of a course in Methods of Teaching Sight-saving Classes, which was given at the University of Cincinnati during the summer of 1925.

Sight-saving classes are such a new development in school activity, and ideas are changing so constantly, that no statement of this sort can be permanent. While this is being written many changes, without doubt, are being initiated. In addition to this, circumstances and varying school systems change conditions under which these classes operate. Nothing can be considered as final. However, among the teachers attending the University class there seemed to be considerable unity of idea and opinion regarding teaching methods, which may be helpful in answering many questions asked regarding the present practice in conducting classes for pupils with seriously defective vision.

REASONS FOR ESTABLISHING SIGHT-SAVING CLASSES

Sight-saving classes are established for two reasons:

1. To conserve the sight of school children whose vision may deteriorate under ordinary school conditions.
2. To afford an education for children who have such defective sight that school progress is impossible without the use of large type text-books and material.

Children selected in accordance with these reasons are naturally divided into two groups:

I. Children with Progressive Eye Defects

In this first group are included the myopes, especially those with high degrees of nearsight or with a progressive condition. With books held close enough, these children may be able to

see the smallest print. In working under this condition the myopia is increased and leads on to a definite deterioration of the eye itself.

II. Children with Permanently Low Vision

The second group includes children who have congenital amblyopia, that is, low vision from birth. These children never see well and there seems to be no way of correcting the defect. They are not able, as in the case of the myope, to use small type, but must depend on the large type to carry on their school work.

The cases used in the above illustrations are only two of the many types of children entering sight-saving classes. As a whole, the degree of vision of these children covers a considerable range. In fact, it is highly improbable that any two cases in a sight-saving class are alike in every particular.

EDUCATIONAL STATUS OF SIGHT-SAVING CLASS CHILDREN

In order to conduct a sight conservation class properly there are three points which must be clearly understood by the teacher in charge:

1. These children are *sighted*, not blind.
2. What the nature of the handicap of each child is.
3. What the mentality of the children admitted is.

The first important step in developing right methods of instruction is to clear away any confusion which may exist between this work and work for the blind. Historically, these classes grew out of classes for the blind. After classes for the blind had been established in public schools, it was recognized that there were many children who had such defective vision that they did not fit into the regular classes, and yet who were equally misplaced among the blind. They formed an entirely separate group. They were not blind and yet could not carry on school work in the ordinary way. The only thing in common between this group and the blind is the fact that they are both visually handicapped. So great is the difference in the

degree of handicap that there can be no question but that the sight-saving class child should be classified with seeing children in determining the best methods for his instruction.

Psychologically the two types of children (blind and sight-saving) are very different. The blind child, figuratively speaking, sees through his fingers. His chief avenue of perception is tactile. He is aided by his other senses, of course, but in handling educational tools he must rely chiefly upon his sense of touch.

For the sight-saving class child the chief avenue of perception is visual. He gets his impressions through his eyes almost to the same extent as does the child with normal vision. It is true that many of his visual impressions are faulty and indistinct. And it is for the purpose of keeping this avenue of perception through the eyes possible of its best use that sight-saving classes have been established. Any relaxation in this effort tends to defeat the purpose of the class. The problem of instruction for the sight-saving class child narrows down largely to the adaptation of the best teaching methods used with the normally sighted, to the needs of the child with defective vision.

Normal methods cannot be fitted to these children until the sight-saving class teacher has a fair idea of the nature of the physical handicap. Some knowledge of eye hygiene is indispensable. A course in this subject would be valuable, but, lacking this, a teacher can help herself considerably through an independent study of such books as Posey's *Eye Hygiene*, May's *Diseases of the Eye*, and Kerr's *School Vision and the Myopic Scholar*. She may get many valuable suggestions through attending clinics, and in consultation with the oculists who are attending the children in her group. No discussion can be given at this time of the general principles of eye hygiene, but from time to time the connection between this and the teaching problem will be shown.

There are two main reasons why children are retarded in school progress:

1. Mental deficiency.
2. Physical handicap.

Unless proper tests are applied, it is frequently impossible to determine in an individual which is the actual cause of retardation. When a child with seriously defective vision, who is of normal mentality, falls far behind children of his own mental age, it is not surprising. Very often, however, a child has a double defect—mental deficiency and low vision. It is generally accepted that the major defect is mental, and this should determine the final disposition of the case. This child will profit most by the training given in a school for mentally deficient children, but in planning his work there should be coöperation between the sight-saving class teacher and the teacher of the mentally defective so that the sight of the child with the double defect may be conserved.

THE SIGHT-SAVING CLASS ROOM

Selection

In selecting a room for a sight-saving class preference is given to one which faces east or north-east. Theoretically the light in a north room is steadiest, but every child should have some sunshine during the day, and particularly with children who deviate in any way from the normal that is an essential. In Posey's *Hygiene of the Eye* (page 122) the statement is made that ". . . the hygienic value of sunlight should be given due recognition, which would result in penalizing northern exposures." And on the same page it is said, "While north light is preferred for many occupations where sunlight is not permissible, this consideration does not apply to school rooms."

The Code of Lighting School Buildings, which is referred to below, says on page 8: "An eastern exposure is generally considered to be the most desirable for class rooms and a northern exposure the least desirable."

Size

A regulation sized class room is usually selected because this gives sufficient blackboard space and will afford ample room for the children to move about in their varying activities.

Sight-Saving Class children at work. Mann School, Cincinnati, Ohio. Note overlapping window shades; artificial lighting units; desks adjusted to need; children at typewriters.

Window Shades

Adjustable shades are used to control the natural light. The ideal type is of translucent buff or gray colored material, two shades being fastened at the middle of the sash, one pulling up, the other pulling down. Special brackets may be purchased for this purpose so that the two shades overlap and do not permit the light to shine between the rollers.

Wall Coverings

The walls of the room should be decorated in a French gray or buff, with a white ceiling. The surface should be dull in finish, so that no glare will be produced. The selection of color is important because upon it depends the efficiency of the artificial light which is installed.

Artificial Light

Because so many days in winter are dark, and because sight-saving class children are so susceptible to changes in light, ideal artificial lighting should be installed and should be used freely. The best method of procedure to follow in the installation of these lights is the Code of Lighting School Buildings which is published by the Illuminating Engineering Society, 29 West 39th Street, New York, N. Y.

Desks

In a room thus lighted and decorated desks of the Moulthrop type are installed. These should be of sizes suitable to the grades which are represented in the room. These desks have an adjustable top which may be slanted easily, thus bringing the work up to the child instead of permitting him to bend down to his work. The surface must be dull in finish and this should be specified in the order. Frequently these desks are sent out with such a high polish that the glare from their surface is considerable. This condition is bad for the eyes of any child.

Typewriter

For sight-saving class rooms which have grades above the fourth a typewriter is necessary. A standard typewriter with a good table should be purchased. It is suggested that the keys be blanked. The use of the typewriter will be discussed in the section which takes up that question.

Cupboard Space

An adequate supply of cupboard space is necessary and it is suggested that these cupboards be provided with locks because much of the material is valuable and should be protected.

Miscellaneous Equipment

It is understood, of course, that there should be installed a teacher's desk, chairs, sand table, and a table for lunch. The lunch question will be considered separately, but it may be well to say here that in case there are no facilities for lunch in the school building it has been proved advisable to install an electric hot plate with a supply of dishes and cooking equipment, so that at least one hot dish may be prepared for the children at noon.

Large Type Books

Large type books are perhaps the most important item of necessary supplies. At present the only organization publishing these books is the Clear Type Publishing Company, 36 Elston Road, Montclair, N. J. These books are expensive, but in ordering them care should be taken that every grade is supplied with some reading material.

Paper

The paper most ordinarily used in sight-saving classes is of rough finish and a deep cream in color. In most schools this has been ruled with lines about 3/4 inch apart, and usually the lines are in green. Some schools have this paper put up in

pads and others in loose sheets. The sheets are about 9 x 12 inches. Some of the paper is ruled with the lines 9 inches long, and others with the lines running across, 12 inches long. If these sheets are cut in half or folded, several sizes of paper are available. In addition to this there should be paper without lines for use in arithmetic.

Pencils

Most of the work is done with heavy lead pencils, and any type of soft black lead is suitable. Care should be taken, however, that the lead is not so soft that the papers, in rubbing together, will cause the writing to blur.

NON-SEGREGATION PLAN

Size of Class

After the room is equipped and the children brought to it, it will be found that many grades are represented. With an increased number of grades fewer children can be cared for. It would be ideal if enough classes could be established in any community so that one sight-saving class teacher would take care of possibly four grades, with a maximum number of 16 or 18 children.

Standards of Work

Because these children are normal mentally they should not be segregated in their class rooms. Standards of the sight-saving class should be, so far as possible, the same as those of the regular grade. We are compensating for the eye handicap by giving the children ideal conditions under which to work, and so we must expect from them the same work as we would expect from a child of equal mentality. Further than this, children learn a great deal from one another and the competition prevailing in a normal class is a very valuable part of any child's education. It is understood, however, that sight-saving class children ought not do any great amount of work requiring the use of their eyes in the regular grades, but they have a

wide field open to them in the oral work which is carried on.

Many of our children entering sight-saving classes in the lower grades come from homes and families where at least a high school education is expected of every child. Unless standards are kept to that of the elementary school, it is impossible to pass these children on to high school fully equipped for that type of work. In every way it must be emphasized that high standards be maintained.

Improvement of Eye Conditions

A good many children so improve under the treatment and care given in a sight-saving class that they are returned to the regular grade. At one time 10 percent of the pupils enrolled in an Ohio Conservation of Vision Department were returned to the schools from which they had come with sight improved. Had they been left without the care given in a sight-saving class, the oculists tell us that the eye condition could not have improved and possibly would have been made worse. The teachers say that these children could not possibly have done the required school work because of their defects in sight. This means that while the child's eye-sight was being cared for, he had not lost a year in school. It is of utmost importance for this one reason that high standards be maintained.

Coördination with Regular Grades

This maintenance of standards is obtained by a plan of coördination with the regular grades, i. e., a child enrolled in a sight-saving class attends the regular grade of his same classification for oral work. In general, any work which requires the use of the eyes should be done under the direction of the sight-saving class teacher. This plan necessitates a good deal of moving about through the building. If five grades are represented in the sight-saving class, the children in these grades are attending five different regular rooms for oral work at different times during the day. These five grades are having all their written work and preparation with the sight-saving class teacher.

PROGRAM MAKING

It is absolutely essential that a careful program be made and maintained in order that each child receive his necessary share of attention during the day. A program of necessity must be flexible, but it ought not vary in the main details.

Mechanics of Making Program

Let us suppose that there is represented in the sight-saving class the first four grades. During the first few days of school the sight-saving class teacher should determine in consultation with the principal of the building the regular grades to which each one of her groups is to be assigned for oral work. From these grade teachers she obtains a copy of the programs which they are carrying out with their children. This will enable her to determine at what hour of the day the regular teacher will be giving the oral work which is valuable to the sight-saving class child.

A simple way of proceeding with the mechanics of program making is to draw upon a large sheet of paper a block of rectangles which will represent horizontally the hours or periods of the school day. Vertically the rectangles will represent the groups which are enrolled in the sight-saving class. For instance, at the period beginning, say, at 8.45, if the teacher reads across the row of spaces opposite that time, she will be able to see what is being done by the first grade, the second, the third, and the fourth. This will be true for any period during the day. The first step in determining what is to be done for each grade at each hour of the day is to write into the proper space what oral work the child takes with the regular grade.

A program may be considerably simplified by the use of colored inks to show movements of classes, and the customary red for "*stop*," green for "*go*," and black for "*rest*," will graphically illustrate what activity is being carried on. If the special teacher will write in green ink every subject for which her children *go* to the regular grade, it will help her to remember when the children move from her room. In the remaining blank spaces are to be placed, first, the work which the chil-

dren do with the sight-saving class teacher, and second, the work which the children carry on independently. The work done with the sight-saving class teacher is usually reading, arithmetic, and typewriting. These, in red ink, show exactly the lessons being taught by the sight-saving teacher at any hour during the day. In the remaining spaces, in black ink, may be placed the work which a child does independently—for instance, a preparation of spelling, geography, or history. A sample program is appended, from the study of which some idea of procedure may be obtained.

Program Checks

After the program is made it must be checked in three ways: First, for the purpose of seeing that every child has his share of time during the day; second, that the teacher is teaching only one thing at a time; and third, that there are no consecutive periods of close eye work. If we read across the line showing the activities for every grade at 8.45 o'clock in the morning, we shall find that the sight-saving teacher is giving the fourth grade arithmetic. The first and second grades are working alone on phonics, while the third grade is having a spelling lesson with the regular third grade class. We shall see that the teacher is *teaching* just one thing, that she is *supervising* the activities of two other grades which are working independently, while one grade is out of the special room attending oral work in the regular classes.

Three colors are shown then on the first line—*red* for the work the teacher is doing, *black* for the work the child is doing independently, and *green* for the work which is being carried on outside of the special class room. This same check should be carried through every hour of the day, and the special teacher must be careful that she is not trying to teach two arithmetic lessons or two reading lessons, or any combination of two or three grades at the same time.

The second check is of work for each grade. Take the first grade and read down on the program and you will see that for the first period in the day the first grade has independent work in phonics. At the second period the first grade has reading

Monday

	1st	2nd	3rd	4th
8:45	Phonics	Phonics	Spell.	Arith.
9:15	Read.	Gym.	Geog.	Spell.
9:45	Game	Game	Read.	Read.
	Recess			
10:30	Read.	Lang.	Study	Lang.
11:00	Handwork	Read.	Lang.	Spell.
11:30	Story	Arith.	Arith.	Geog.
	Lunch			
1:00	Phonics	Story	Arith.	Arith.
1:30	Writing	Writing	Free	Read.
2:00	Free	Free	Read.	Free
2:30	Gym.	Arith.	Story	Gym.

with the sight-saving teacher. At the third period the first grade children are having a game with the second grade children in the sight-saving class room. This may be a number game or a language game. At the next period, which in some schools would come after recess, the first grade child has a second reading period with the sight-saving teacher. If each grade is checked, the teacher will be able to see at a glance whether the pupil has received during that particular day instruction in every subject which would ordinarily be given in the regular class room.

The third check is that which has to do with the eye condition. Sight-saving class children should not be required to use their eyes for any long periods at a time. If the child has a reading lesson which he carries on for twenty minutes, the next period of activity should be something in which the focal distance at which he works is changed. After reading for twenty minutes he might do oral work, which does not require the use of his eyes for the next period. If work has been done at the blackboard, his work might be varied by the use of pencil and paper if eye work is absolutely necessary for two consecutive periods. It is often very valuable to let the child move about the room for a few minutes between periods of work. Sometimes we tell the child to close his eyes and rest for a short time.

It must be ever kept in mind that the first function of a sight-saving class teacher is to save eyes, and every activity should be initiated with that in mind. Eyes come first and education second. Kerr, in his book, *School Vision and the Myopic Scholar*, in discussing the ideal of the sight-saving class, says: "This is quite different from the academic ideal of most school work. For the majority of these children it would possibly be an advantage if they should not learn to read or write beyond the merest rudiments. They should learn the minimum of reading from wall sheets and be instructed that until they are full grown, for them reading is a vice," and he further quotes Horace Mann, who said in 1843, "Reading and writing are not education."

Programs Will Vary

The program which is used as an illustration is perhaps as simple a one as will be found. In every locality the length of period for each subject varies so greatly that in detail probably no two programs will ever be alike. It may be an advantage to work with two classes at the same time in oral arithmetic or phonics, so that certain grades may be combined. A rather serious complication arises when there are A and B divisions in each grade. That makes really sixteen grades in the elementary school. High school and junior high school programs are, for the most part, not much more difficult than those of the lower grades. The same principles apply in each and it must be understood that there may be wide variation and adaptation so long as the fundamentals are not forgotten.

PROGRAM CONDUCT

Division of Work between Special and Regular Class

An actual division according to subjects might be made, assigning reading, writing, arithmetic, handwork, and typewriting to the special teacher. In the regular grade oral work in history, civics, geography, grammar, spelling, music, and manual training may be taken. This division will vary considerably in different localities, the main thing to be kept in mind being that wherever the use of the eyes is involved, the work should be done with the special teacher. For instance, in history, an assignment may be made by the grade teacher. This assignment is brought to the special teacher, who makes it possible for the sight-saving class child to prepare the lesson. It may be done in several ways. In the first place, the material may be found in large type books. In that case all that is necessary is for the book to be placed in the hands of the child, who will go ahead with the lesson just as he would if he were in the regular grade using the small type text-books. A second way of taking care of the situation, where the large type books do not cover the assignment, would be for the special teacher to read aloud from the text-book used in the regular grades. Care should be taken in reading aloud that the lesson is not

retaught. There is considerable misunderstanding on this point. A sight-saving class is not a coaching class. It simply makes available, either orally or through large print books, materials which the handicapped child will be unable to use were he in the ordinary grade. If the history lesson which is being prepared calls for the use of maps, it is the function of the sight-saving teacher to provide suitable ones for the pupil. A full discussion of map making will follow in a later section. After the lesson is prepared the child goes back and recites with the normally sighted children, competing in every way with those who are his equal in grade and mentality. The same idea is carried on in civics and in geography. In the language the procedure is often reversed. There is a general tendency to do more and more oral work. Especially in the development of composition is this true. Therefore the child takes part in the general discussion which precedes the written composition. As the regular grade starts to prepare compositions the sight-saving class child is returned to the special room to do his work under ideal lighting conditions, either on the typewriter or with the special paper and pencils which he is accustomed to use.

Individual Programs

The sight-saving class child should be responsible for all assignments given to him, and it is a great help if each child knows thoroughly how his program works from day to day. It is suggested that after the teacher's program is prepared an individual one be made for each child, so that he may know in what order his lessons follow each other, and just what he is expected to do at every period during the day. If a clock is placed on a wall at about the height of the eyes of the average child, he will be able to determine for himself just when he is expected to go out for any recitation.

Punctuality Essential

From the point of view of the regular grade teacher it is not easy, as a rule, to have children going out and coming in to her room at all hours of the day. Most regular grade teachers,

once they understand the situation and appreciate the eye condition of the children who are being taken care of in the special room, will come more than half-way in coöperation; but the special teacher must never lose sight of the fact that it is a source of interruption and possible annoyance if the sight-saving class children do not enter and leave the regular grade room in good order. They should appear at the door of the regular room exactly on time, and should enter in a quiet and orderly manner. When they are dismissed, they should go out of the room in the same way, but in being dismissed they will have to depend upon the teacher or the ringing of bells for a signal that the lesson is finished.

Assignments in Regular Class Work

The problem of getting the assignments from the regular grade is worked out in many different ways. In some school systems which require lesson plans from every grade teacher a week in advance it is a very simple matter for the special teacher to know exactly what is going on in every subject. In other schools, however, there is great variation in the preparation of plans for lessons, and there it is the special class teacher who determines the simplest way of finding out plans for the next day and keeping her children prepared in their lessons.

One of the easiest ways of getting assignments for the sight-saving class child and for both teachers concerned is to have one of the children in the regular grade write down anything that is to be prepared or to do any copying necessary. This may be done at the same time he copies his own assignment if he uses a carbon sheet and gives the sight-saving class child the second copy. In some schools the sight-saving class pupil carries a small note book and the regular grade teacher writes the assignment there. It is well to develop in the boy or girl who attends a sight-saving class a sense of responsibility for his own work. However, it is a good plan for the sight-saving class teacher to check up on assignments frequently, seeing each regular teacher several times a week to be sure that nothing is being omitted.

SPECIAL METHODS

In discussing the question of special methods in connection with the eye work which must be carried on by sight-saving class children, no idea can be clearer than that which Kerr has stated in his book on school vision.* He says: "The point to remember in this work is that reading and writing and figuring on paper are ophthalmologically bad, but educationally to some extent required, and the actual practice has to be a compromise in which as much good as possible is to be got at the cost of as little damage as can be incurred."

A. ARITHMETIC

Aims

In teaching arithmetic the aims for the sight-saving class child are exactly the same as for any other group of children. Two things must be kept in mind: First, that the child be prepared for the practical work of everyday life, and second, that he is held to the standard of the regular grade in arithmetic in order to be promoted in a normal manner and attain the requirements in mathematics which are demanded for entrance into high school. In determining procedure in arithmetic it would be well for the sight-saving class teacher to follow the course of study and the text-books which are in use in her own school system. The lessons may be done in several ways:

Oral Work

First of all is the oral work, which is of greatest value to sight-saving class children. They should be trained to do many more processes mentally than the average child in the grade is required to do.

Special Preparation of Suitable Material

Because the regular text-book is not suitable for sight-saving class use, certain of the more complicated problems and demonstrations must be worked out on the blackboard. The problems may be copied on the blackboard; the child works them either on paper or at another section of the blackboard

*School Vision and the Myopic Scholar, p. 141.

nearby. Problems may be copied on paper with India ink or heavy lead pencil by the teacher, handed to the child, and he may work them either on paper or at the blackboard. Where there are five or six children in one arithmetic class, it would be necessary to copy a set of problems five or six times in order to make them available for each one of the group. A good deal of time can be saved if the problems are copied once and then cut apart so that each child has one problem, which, as soon as he has finished, he exchanges with his neighbor, so that at the end of the period each child has worked every problem in the lesson. Some arithmetic problems have been put into large type, but it is generally agreed that they are not satisfactory. They aim to supplement in a way the regular text-book, but they are of such a nature that they do not fit easily into all circumstances, and should not be relied upon as a text-book.

Special Number Devices

In the catalogs displayed by Milton Bradley Company are found a good many devices in the way of cards showing number combinations, etc., which are very good for use in these special classes. Care must be taken in selecting devices from a general catalog to be sure that the print is large and clear, that the paper is of light color, preferably cream, and that it has no glaze. One set of material which seemed to be suitable from the description in the catalog proved to be printed on dark green cardboard with very tall, thin letters; it was absolutely unsatisfactory and could not possibly have been used. Some of the very best material for use in arithmetic may be had from the Harter Supply Company, Cleveland. This is, for the most part, drill cards in number combinations, sets being available in several sizes.

Work Must Be of High Standard

Every effort should be made to compare the progress of the sight-saving class group in arithmetic with that of the progress of the children in the regular grades. This can be done in several ways. Groups from the regular grade may be invited into the sight-saving room to take part in certain arithmetic

lessons. The sight-saving class child who excels in his own small group is often surprised to find that he does not excel when he is competing with a child of normal vision, and the opposite is also true. It is encouraging for a child with defective vision to find out that he can do just as well as the boys and girls who have normal eyes. These children have often been outcasts from the grades from which they came. They could not do the work because they could not see the blackboard or the books and were constant failures because of physical disability. Because they are normal mentally, they appreciate very keenly their failure to keep up with children of the same mental ability, and one of the first and most important problems of the sight-saving class teacher is to restore to the child his confidence in himself. In competing in arithmetic we have one way of accomplishing this.

Another way of keeping up standards is by sending the sight-saving class child into the regular grade for oral work in arithmetic. This can be arranged between the two teachers. It has been found valuable to give to the sight-saving class child the same tests which are taken in the regular grade. If the special teacher keeps in touch with the regular teacher, she will know when tests are to be given and often the regular teacher will be glad to send a copy of the test to her.

Some of the standard performance tests in arithmetic are printed in sufficiently large type to be used by sight-saving class children. It is often very helpful in case they are not printed large enough for the teacher to copy them and thus measure her children by the same scale which is used to determine the rating of the average child in the school system.

B. READING

Supply of Material

One of the most difficult problems connected with sight-saving class work is the matter of reading material. For a number of years books have been put out in 24-point type on heavy cream paper, on a variety of subjects, by the Clear Type Publishing Company. Every year new subjects are being

added, but the cost is still almost prohibitive to school systems maintaining sight conservation classes.

Limitations

We learn to read for information and for pleasure. If the sight-saving class child, as Kerr says, is to be discouraged from forming reading habits as far as possible, we are cutting him off from a source of pleasure and information, and, so far as possible, we should make some effort to substitute other activities for at least a part of the time which would ordinarily be given to reading. Our children cannot go to the public library and get books because the type is not of sufficient size to be suited to their needs. If by chance the child is allowed to do so, he may possibly break down in one evening's reading all the good which has been accomplished in many days in the sight-saving class. When one considers that it is possible for many of the sight-saving class children to read the smallest type, a thing which is particularly true of the myopes, and realizes that in doing so the degree of myopia may be increased, it is easy to understand how essential it is to substitute other activities for reading habits. With far-sighted children, or hyperopes, the eyes are constantly under a strain no matter whether the work is near or at some distance. For that particular type of child reading habits should be discouraged. In some of the static cases there is no particular strain to the eye involved in reading. These children simply cannot see the small type, and in their efforts to do so, the nervous strain is intense. The sight-saving teacher then has as her problem the minimum amount of reading that is consistent with the carrying out of school activities. During the school day the children must read geography or history lessons. It would be well then to omit a reading lesson as such. A geography lesson may well be a reading lesson. It is suggested that sight-saving class teachers interest their children in club activities, and that some effort be made to satisfy a child's desire for stories, through reading aloud at home by the parents or brothers and sisters.

C. WRITING

Running Print Desirable

In carrying on any school work, hand writing is one of the essentials. It should, of course, be reduced to the minimum for children with seriously defective vision, but it is nevertheless very necessary. The aim for sight-saving class children in writing should be legibility. Speed is a minor consideration. The type commonly used in newspapers and books is probably the most legible matter which we meet in ordinary use. The writing which most nearly approximates this is the running print or manuscript writing. In England this is taught entirely in the lower grades, and it is not until a child is fairly well advanced that any script is used. Much is to be said for this. The letters are simple, all unnecessary lines are eliminated, and the legibility cannot be questioned. It is interesting from a pedagogical standpoint that only two concepts of a letter are necessary for a beginning child using this method: Capitals and small letters. As it is ordinarily taught, a child must learn a capital and small letter in script and a capital and small letter in print, making four concepts for each letter.

For children who enter sight-saving classes in the first grade and who will probably continue in the class throughout their school life, running print might well be taught for use at all times.

Children with Established Writing Habits

However, sight-saving class children are admitted to the special class at any time and come at all ages and grades, so that writing habits have already been established, and while it is possible to teach them running print some other disposition should be made for these children. It is not possible to follow very closely the ideals and aims of most of the writing departments in the public schools. Too much emphasis is placed on fine line, shading, and speed. In this connection it is well to remember that sight-saving class teachers must always strive to save sight. It is impossible to follow some of the accepted ideals in writing when this is kept in mind. With the older children who enter the sight-saving classes with estab-

lished habits it will be necessary to require the writing to conform to sight-saving class standards. Usually these children are miserable writers, and come to the class with faulty concepts of the letters. It is not difficult for them to change their ideals and most children appreciate the increased ease with which they are able to produce acceptable work. When sight-saving class children return to the regular grades it is found they will quickly adapt themselves to the style of writing required in the regular public school classes, but with an increased legibility over that with which they entered the sight-saving class.

Script

When script is used, the nearest we are able to approximate the running print is in a clear round hand with each stroke of equal width. The vertical handwriting in vogue a few years ago most nearly approximates the ideal for sight-saving classes. On paper with lines ruled about $\frac{3}{4}$ of an inch apart capitals should be made about $\frac{1}{2}$ inch in height. The capitals do not completely fill the spacing between lines, and in this way legibility is increased. Legibility is always increased by adequate spacing between words and between lines.

Size of Letters Made on Blackboard

Size of letters may be carried to an extreme. A sign board with letters six feet high is legible at many hundreds of feet while it is absolutely impossible to read it at two feet. This fact should be kept in mind when writing on the blackboard. Capitals three inches in height and small letters about one and one-half inches will take care of the average situation at the blackboard provided the chalk is medium soft and the lines are of even width. It may be well to say at this time that the blackboard should always be clean and free from dust. If the blackboards are erased with a downward stroke and rubbed off with a dustless duster, it will not be a difficult matter to keep them in good condition. The size of the blackboard writing will vary slightly. The same clear round hand or running print should be used for all blackboard work. Care should always

A lesson in reading. Note blackboard printing and writing and blackboard globe.

be taken that the writing is well spaced, and that there is no crowding of words or letters.

There are three instruments usually used in writing: 1. Crayons; 2. pencils; 3. pens—using respectively chalk, graphite, and ink as materials.

Chalk

The chalk should not be too hard, for that gives a thin gray line. On the other hand, chalk that is over-soft produces a large amount of dust. This makes the blackboards gray, and the writing on a gray blackboard is never as clear as when done on the darker surface of a clean slate. In every school system there is a medium grade of chalk which may be had. It is not necessary to purchase any particular make of chalk for sight-saving classes. Medium soft chalk for use in any school system will answer the purpose very well. "Old Faithful-Sterling," put out by the American Crayon Company, is among the many kinds that have proved satisfactory.

Pencils

Pencils offer very nearly the same differences as chalk. The lead should be black and soft, so that the lines produced are clear and even. A second feature to be desired is that the pencil mark does not rub easily. One lot of pencils used in sight-saving classes fulfilled every requirement but broke so easily that they were abandoned. Two satisfactory types of pencils are Weatherproof Faber, No. 6639 (Faber Pencil Company), and Eagle Auditor, No. 286 (Eagle Pencil Company, New York). Because the pencils are soft they wear down quickly. When sharpened by hand, the children break the points and whittle away a pencil in a very short time. It will be wise to have a pencil sharpener in each room. This should be of large size in order to take the pencils which are commonly used in sight-saving classes. Some pencil sharpeners are made only for the smaller size pencils, and the large or giant pencil sharpener should be definitely specified in a requisition. The children should be taught how to use these pencil sharpeners, for, unless they are watched, they may waste the pencil almost as rapidly as they do when using a knife.

Pens

Two types of pens have been used with some success. The one is Speed Ball No. 4 (Hunt Pen Company), and the second, Esterbrook Drawing and Lettering Pen, No. 1 (Esterbrook Pen Company). With the older children it was found necessary to make permanent copies of a good deal of the work. In note-books the pencil writing rubbed so that the notes became illegible and a source of eye strain. The average pen did not answer the needs of the student because the lines produced were entirely too fine. No pen so far has been absolutely satisfactory for sight-saving class use, but the two mentioned are the best that have been found. These are rather expensive. The Esterbrook pen retails for 10 cents, or $1.00 a dozen, when purchased in lots. It is made with a flat disk at the point and requires some skill to use because this disk must be kept flat on the paper at all times. If the edge is used a fine line is produced in one direction and a heavy line when the disk is placed flat on the paper. With the Speed Ball pen the point is in a cup shape and is much easier to use.

In some sight-saving classes the older children have used very heavy fountain pens. These are not entirely satisfactory. They are expensive, easily lost, and are apt to make a shaded line which is most undesirable.

Quality of Ink

School ink is usually very thin and a blue or gray color. India ink is quite satisfactory because of its color, but it is expensive and apt to get thick. Some sight-saving class teachers have found that a mixture of India ink and school ink, half and half, answers every need of the children. The quality is good, the color is good, and the expense about half that of India ink alone.

Lines not Necessary for Blackboard

There has been a good deal of discussion as to whether lines should be ruled on paper and blackboards, with a growing tendency toward the side of those who stand for unlined surfaces. Under no condition should blackboards be ruled with

white lines. When the white chalk writing is added to these white lines, it forms a source of eyestrain, especially in astigmatic children. The lines alone would cause eyestrain. Some blackboards have been ruled with a black wax crayon (*Staonal* No. 1, American Crayon Company, Sandusky, Ohio). This does not offer the eyestrain which is produced by the white line, and the difference in texture of the surface assists the children in keeping their writing well spaced and straight. Some sight-saving class teachers feel this is an asset with children who are beginning to learn to write. It might prove helpful if a small space low on the blackboard were ruled in this way for the beginning children. But in most cases the unlined blackboards will be most satisfactory, if the teacher requires the children to write neatly, space lines well and write straight across the blackboard. Good legible work depends entirely upon what the teacher demands and expects from her children. If she cannot control the legibility and spacing of the writing by establishing a sentiment for this in her class, she should use the arbitrary means and rule the blackboard. It is much more desirable for the children to understand why they should use the unlined boards, and if it is made a privilege for them to write in this way, they will soon coöperate in producing a clear legible writing.

Lines for Paper

These same ideas may be applied to the use of lines on paper. Several years ago there was a good deal of experimentation with different colors of lines and different quality of paper. After trying out blue, purple, and green lines on the manila paper, the green lines were found to be most satisfactory to the children. We have accepted the lines on the paper without much thought of using any other method. Recently, however, there has been a tendency to use unruled paper, just as there has been a tendency to use unruled blackboards. What is pedagogically right for normally sighted children in the regular grades is probably right for sight-saving class children. In the regular grades children use lines quite generally. Lines will be found even in the college notebooks and are quite generally

used in high school. They do help in making written work clear and easy to read. In mathematics it would seem best not to use lines, but in the sight-saving classes, where the whole aim is for legibility, the children are apt to crowd their work considerably unless very closely watched. Theoretically the idea of not using lines is all right, but from many practical aspects they are a great help in producing the end desired. It is suggested that both kinds of paper be purchased for sight-saving classes, and, as far as possible, the children be encouraged to use paper without lines, but where legibility must be sacrificed for the sake of plain paper, there is no question but that the ruled paper should be substituted.

Formal Writing Lessons in First Two Grades Only

Except in the first and second grades the sight-saving class children should not be given formal writing lessons. There will be opportunity enough in the written work required to establish good writing habits. Formal writing lessons, in addition to the written work which is done every day, are an additional tax on eyes that are already weak.

Aims in Writing

The subject of writing causes as much discussion among sight-saving teachers as any other topic. They agree, however, on these fundamentals: First, that the work must be legible; second, that the writing should be simple, of the vertical type; and third, that the stroke should be even in width and without shading. Just how these ends are gained varies considerably with the teacher. What one teacher accomplishes with lines another accomplishes without lines, and so long as the desired end is gained and no eyestrain is produced, the method the teacher has used is not of great consequence.

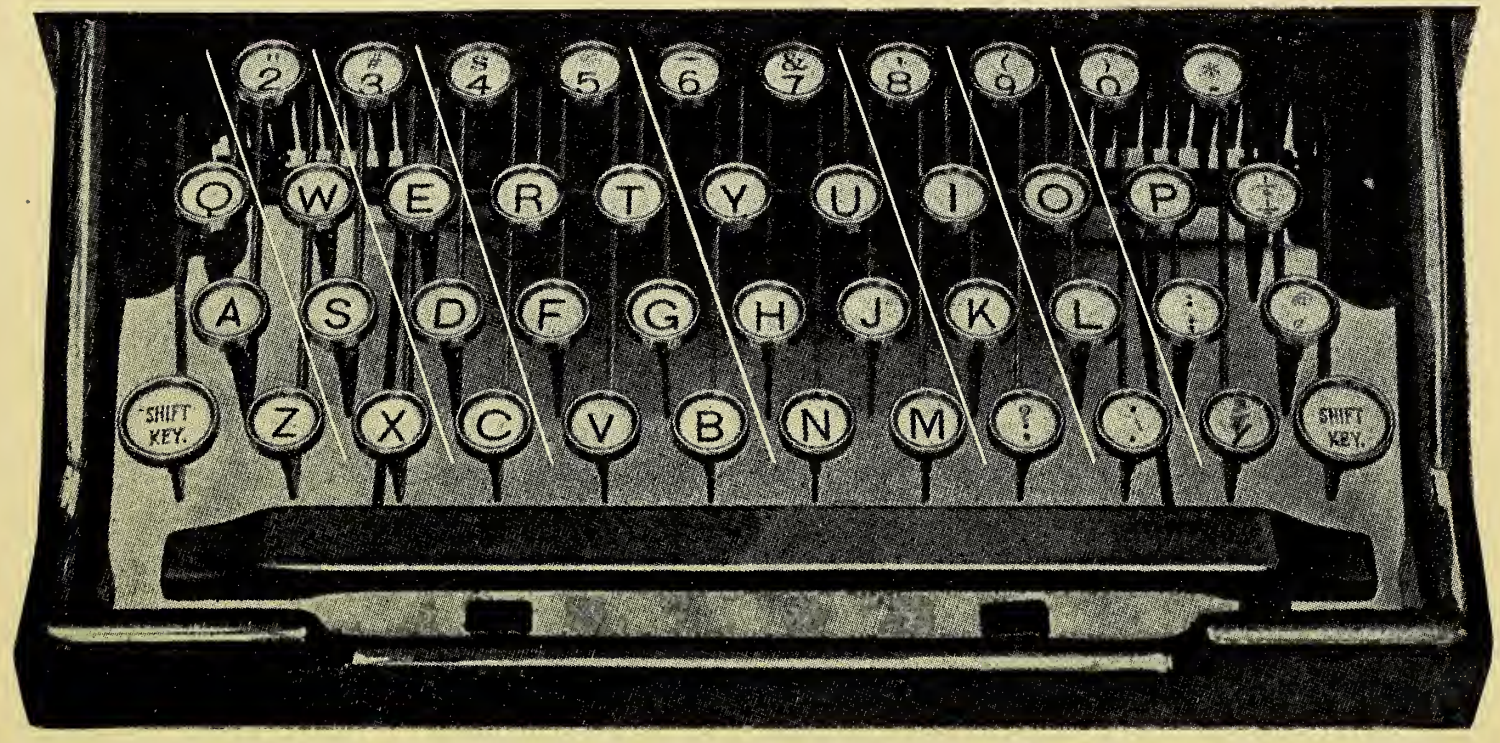
D. TYPEWRITING

The average teacher, on beginning sight-saving class work, does not have any experience in the theory and methods of teaching typewriting and is not able to use a machine. For this reason it is necessary to go further into the question of

Chart of the Standard Typewriter Keyboards

Correct Fingering Indicated by Figures

Left Hand					Right Hand					
4	3	2	1	1	1	1	2	3	4	4



general methods here, rather than to limit suggestions to the adaptation of methods already established. The ideal thing for a sight-saving class teacher to do is to take a short course in typing, so that she may become familiar with the best methods in practice. If this is not possible, she may observe a beginning class or make a study of a typewriting manual which is in use in her own school system or in some recognized business school.

Not Taught as a Vocation

Two points to be kept in mind in teaching typewriting to sight-saving class children are, first, that typing is not taught as a vocation. Typists must have good eyes in order to do the many things which are required in connection with typewriting. They very often do filing and look up addresses, as well as take notes in shorthand, and this is beyond anything which we may expect of a child with defective vision.

Touch Method Essential

The second point to remember is that it is "touch" typewriting which is being taught in the sight-saving class and that this system is the method which is being taught in every good business school. We are fortunate in having this as a fundamental principle in teaching typing. In the use of typewriting a child may produce thoroughly acceptable work without eyestrain.

Begin with Fifth Grade

Typewriting lessons for sight-saving class children start as a rule about the fifth grade.

Selection of Manual

The basis of procedure is a manual of touch typewriting that may be chosen after consultation with some one directly connected with the commercial work of the high school in the local community. These manuals are intended for the use of adults and while they may form a very satisfactory basis for procedure, they need to be simplified considerably for use with children.

First Steps Illustrated From "Curry"

Because Curry's *Touch Typewriting** is used extensively in Ohio, and because it has been reprinted in large type, it has been used as a basis for the suggestions which follow. It must be remembered that any manual may be adapted in the same way and that the lessons which follow are not final. They merely suggest procedure.

In the preliminary discussion, Curry tells how the machine should be opened and closed, names the various parts, and tells in general how they are used. He then explains the position of the hands and body in writing, and gives general directions for practice. Decided emphasis is placed on accuracy, and the beginner is cautioned to proceed slowly. All these ideas may be presented to a child in very simple terms.

In Curry the little finger of the left hand is used as a starting-point in placing the hands in proper position. This finger rests on "a." The other fingers of the left hand follow along that row of keys resting in succession on s, d, and f. The child is then told to skip two letters and with the first finger of his right hand resting on j, the other fingers follow on k, l, ;. The thumbs rest on the space bar. It is not necessary to name the keys (except "a") to the child at this time. It is enough to place the fingers on successive keys.

First Lesson: Curry

The first lesson in Curry consists of the following exercises:

fgftfbfrfv
jhjyjnjujm
gfgrgvgtgb
hjhuhmhyhn
fgkjftkyfbjn frjufvjm
gfhjgrhugvhm gthygbhn

Each exercise is to be written across the page four times. This is, of course, too much to ask of a fifth grade child. It will be noted that the first line uses only the first finger of the left hand. The second line uses the first finger of the right hand. Lines three and four are the reverse of the first

* James S. Curry, 1516 Almeda Ave., Cleveland, Ohio.

two, while the fifth and sixth lines take each hand in alternation.

The child is now told that the little finger of his left hand rests on "a" and that the first finger of the left hand rests on "f." If with the first finger of the left hand he reaches one key to the right, he will strike "g." The first exercise for the sight-saving class child then will consist merely of the first two letters of the first exercise in the Curry manual. It will appear thus:

fg fg fg fg fg fg fg fg fg fg fg fg fg fg fg fg fg fg fg fg

Care should be taken that the space bar is struck with the thumb of the right hand, because a finger on the left hand has made the last letter. It may be noted here that the reverse is true. If the right hand strikes the last letter, the thumb of the left hand strikes the space bar. In this lesson and in every lesson where a new key is being introduced the teacher works with the child, and there should not be long periods of mechanical practice at this point. More will be accomplished in two ten-minute periods with the teacher than in hours alone.

The second letter to be introduced is "t." The child is told that by reaching up to the right, just over "g," he will strike "t." He then practices this:

ft ft ft ft ft ft ft ft ft ft ft ft ft ft ft ft ft ft ft ft ft

For a few minutes he may work alone writing:

fgft fgft fgft fgft fgft fgft fgft fgft fgft fgft fgft fgft fgft

In this manner all the exercises in the first lesson of Curry may be developed—the right hand as well as the left. It may take several weeks to learn thoroughly all the letters struck by the first fingers. There should not be any haste in the matter. Take plenty of time. Aim for accuracy and, above all, have the children write slowly.

Second Lesson: Curry

The second lesson in Curry asks that four lines of the following words be written:

vaunt
hungry
murmur
gruff
grammar
funny
barb
jaunt
juryman
naught

With the addition of "a," which the children are told from the beginning is their guide key, on which the little finger of the left hand rests, the words given above use only the letters struck by the first fingers. Before using these words for practice it is a good plan to introduce some of the simpler words which the child knows, such as: jay, jam, gray, ham, brag, tag. Sometimes the children will make words for themselves, using the letters they know. There is material here for from ten to fifteen lessons, depending upon the individual receiving instruction.

Third Lesson: Curry

The third lesson in the manual asks that the words given above be written consecutively, thus:

vaunt hungry murmur gruff grammar funny barb jaunt juryman naught

This presents a slightly different problem from that of writing the same word over and over. The children will not remember the list, so it is a good plan to write the words on the blackboard at the level of the child's eyes when seated. The typewriter may then be moved directly in front of the copy so that these words are easily followed. Children should not be permitted to watch the keys even if they are blanked. It is better to give them something definite to look at, by way of copy, rather than the negative direction, "Do not look at your keys."

Fourth Lesson: Curry

Still using the first fingers, the writing of phrases is introduced in the fourth lesson by Curry. He asks that four lines of each phrase be written.

an untruth
a furry muff
at that man
a funny jury
my grammar
a gruff man

At the end of each phrase the space bar is struck twice. In any typewriting two spaces are always made after a period and it is probably with that idea in mind that the double spacing is introduced here. A line of phrases appears thus:

an untruth an untruth an untruth an untruth an untruth

Practice Alone

By this time a child may practice alone, but the teacher should observe from time to time the position of the pupil at the machine and the manner in which the letters are being struck. As soon as the first fingers have been mastered thoroughly, the second fingers are developed in exactly the same way. After certain arbitrary exercises, words and phrases are written, introducing the new letters learned. This method is continued until the whole keyboard is mastered.

As each lesson is finished it is a very good plan to fasten it into a note-book cover, marking each mistake and dating the sheet. In this way a child may watch his own progress from day to day until perfect work is produced.

Other Methods

This is only one system of teaching touch typewriting. Any good manual may be adapted in the same way. But no matter what method is used, certain points should be kept in mind constantly. The child should not be permitted to use his eyes to watch the keys or the work that is being written. There should be no back spacing or erasing. He should work slowly. Accuracy should be his aim.

Position of Copy

Any copy which is given to the pupil should be placed immediately in front of him. This may be done by writing it on the blackboard or through the use of one of the stands which may be purchased, as a rule, from the typewriter company. It

should be remembered, however, that such a stand should not be attached to the typewriter or the typewriter table because the vibration of the machine causes the copy to move rapidly and as a result produces eyestrain. Copy should not be placed to one side or laid flat on the table. A child who uses copy in this way twists his body to one side and bends his head over into a position which only increases the eyestrain.

Typewriter for Regular School Work

As soon as a child has mastered the keyboard he should start at once to use the typewriter for regular school work. The spelling lessons are usually the first to be typed. Later, when the marks of punctuation and the use of the shift key for making capitals have been acquired, a child may begin to write simple language lessons. These lessons consist of the written work which is required by the regular grade teacher. When a sight-saving class child prepares notes for his own use, he must do it with pen and ink, for he cannot be expected to read back the small type which is used on some of the typewriters in sight-saving classes.

Size of Type

Any standard make of typewriter may be used. When the machine is purchased, it would be a good plan to investigate the various kinds of type which are available and to purchase that which is largest and most clear. One type which is used in making bulletins consists entirely of capital letters. This type is very large and clear and has a valuable place in school work, but in teaching small children there is a question as to whether or not it is a good practice to use an alphabet made entirely of capitals. Between this type and the small type used ordinarily there is a type consisting of both capitals and small letters which may prove very good for sight-saving class use. It runs about eight or nine letters to the inch. The trade name for type of this size varies with different machines, but it can be easily recognized from a catalog which shows sizes of type. A soft black ribbon on a typewriter makes a heavier letter than a hard ribbon. It might be well to ask for soft ribbons with a machine.

Portable Typewriters Recommended

Portable typewriters are most valuable for sight-saving class children, particularly in the upper grades and in high school. They are easily handled and may be used even during a class period for required written work. So much written work is expected from high school children that the eyestrain involved in this phase of high school alone would make the attendance of sight-saving class children almost impossible unless they were able to do the written work on the typewriter by a touch system. The chief value in the portable for this purpose is the ease with which it may be handled and the fact that work may be done at any time.

STUDIES TAKEN IN REGULAR CLASSES

In the subjects which have been discussed the sight-saving class teacher takes the initiative. She is responsible for the method of procedure and for the results obtained. The following discussion deals principally with the way in which the sight-saving class teacher coöperates with the teacher of the regular grade so as to make it possible for children with defective vision to participate in regular class work.

A. LANGUAGE

Participation in the language lessons presents as few difficulties as any of the subjects taken by sight-saving class children in regular grades. Methods vary considerably in different localities, but with the growing emphasis on oral English the use of children's eyes is reduced to the minimum. Where any written work is required, the sight-saving class children are returned to the special room to do it under supervision.

Book Reports

Book reports which are required in junior and senior high schools offer a particular problem. Not many texts are available in large type. The supply is most inadequate in this respect. However, if a child in the regular grade chooses the same book for the report which is selected by the sight-saving

class child, it may be read aloud by the child with normal vision. If the book is not too long, the sight-saving class teacher may read it aloud. However, great care must be taken that the report is absolutely independent work on the part of the sight-saving class child. There is a tendency for the sight-saving class teacher to stress the most important topics and to give help in outlining reviews. With the older children who have learned to use a typewriter the final copy may be made on the typewriter after the preliminary work has been done with pencil on the wide-lined paper.

Formal Grammar

Where formal grammar is required, it is necessary that a good deal of copying be done by the sight-saving class teacher. There is no formal grammar text in large type, and it is doubtful whether one will ever be printed, because grammars vary considerably throughout the country and no one text could be made which would satisfy all demands. The copying should be done from the text in use in the regular grade. It should be done with India ink on manila paper, care being taken that each page and article be numbered to correspond with the regular text. If these pages are bound together in note-book form, they may be used several times and are valuable at the end of a term for purposes of review. Where there is a printing school connected with the public schools of a city in which a sight-saving class is located, it is often very glad to print in large type words or lessons for sight-saving class children. If a large type book is used as a model, these lessons may be printed on the same kind of paper as that used in the large type books.

B. HISTORY

There is considerable history material in large type. In case it is not the text used by the regular grades, the lessons may be read to the sight-saving class child as they are assigned from the regular text-book, or they may be read by a pupil who is studying the same lesson. The history books in large type may be used to parallel the lessons as they are assigned and often regular grade teachers are glad to have additional text-book

material introduced into the history lessons. It is found frequently that the regular grade teachers borrow the large type books and use them in connection with the lessons. It will be well to mention here that the sight-saving class children should keep note-books for every subject which is taken with the regular grades. The history note-book, for instance, may be simply a few sheets of wide-lined paper fastened together in a cover of heavy construction paper. In this note-book may be kept the assignments or notes on lessons which the children of the regular grade are accustomed to keep for themselves. Because there is no text available, this often serves as a basis for a review at the end of a semester.

C. GEOGRAPHY

So far as texts are concerned, geography offers the same problems as history. There are a good many texts available on the subject in large type; probably the best material is contained in the Nellie Allen Geographical Readers, which have been reprinted in large type. In connection with geography, the sight-saving class teacher probably has her biggest work in providing maps and illustrations for the sight-saving class child who is unable to get his ideas from the small pictures used in the average geography. A section will follow which will deal entirely with the problem of maps and map making. In geography it will be well to keep a note-book, just as was suggested for history.

D. SPELLING

Spelling offers a little different problem. There is such a variation in the methods of teaching spelling that no particular rule can be laid down for the procedure of the sight-saving class teacher. Where the lessons are taught orally and the recitation is mainly oral, the sight-saving class child may attend the spelling class with the regular grade children. Where there is a text and the lessons are assigned from it with the idea that later the work will be written by the children at the dictation of the teacher, the problem is very different. In this case the text must be copied by the sight-saving class

teacher. She will make, in note-books, a copy of the text just as it stands, taking care to number the pages and articles to correspond with the spelling text. The sight-saving class child may then study from this enlarged copy in much the same way as the regular class children study. When it comes to reciting the lesson, two things may be done: (1) If the regular class room is well lighted and the sight-saving class child has a seat where the light is good, he may carry with him pencil and wide-lined paper and write the spelling lesson at the dictation of the regular class teacher at the same time that the other children in the room write it. (2) Where the light is bad, and where, on dark days, there is not adequate artificial lighting, it is not wise to let the sight-saving class child do any written work with the regular grade. In this case the sight-saving class teacher may take a few minutes to dictate the lesson which the sight-saving class child has prepared.

E. NATURE STUDY AND HYGIENE

In nature study and hygiene the same ideas are carried out. The regular class teacher is responsible for the work which is done by the sight-saving class child.

F. TESTS AND EXAMINATIONS

All papers should be graded by the regular teacher, but it is important that these papers be sent back to the sight-saving class teacher so that she may know in what particular way she must supplement the work so that the sight-saving class child may not drop behind the rest of the class. The same thing is true in examinations and tests. Usually the examinations or tests are written on the blackboard, the regular grade children being given pencil and paper and required to answer the questions. Here the sight-saving class child cannot do the work from the blackboard, and it is often inadvisable for him to attempt to do anything which requires as much writing as this in the regular class room. If the regular teacher will send a copy of the examination questions to the sight-saving class teacher, she can recopy them or dictate them to the child with defective vision, and he can answer them either on the wide-

lined paper or on the typewriter. In either case the answers to the examination questions should be returned to the regular grade teacher for correction. If the regular grade teacher cannot supply a copy of the questions, some child in the room may be asked to copy them or the special class teacher may go in and copy them ahead of time. When reports are made, the card should be sent to the regular class teacher for the grades in the subjects for which she is responsible, the sight-saving class teacher filling in the grades for arithmetic, reading, etc.

MAPS AND MAP MAKING

Very few maps can be used in their original condition for sight-saving classes. Usually they are too detailed and not definite enough in outline. Practically every map must be adapted in some way for sight-saving class use. In history and geography particularly the sight-saving class children need a great number of maps, and because they cannot use the maps in the regular text-books, equivalent maps must be provided by the sight-saving class teacher.

The following is a discussion of ways in which some maps have been adapted for this use. It is simply a suggestion and certainly is not final in any way.

A. GLOBES

Globes Re-colored

In ordering equipment for a sight-saving class room a 12-inch or an 18-inch globe should be included. This is of the ordinary type, but in placing the order a dull finish should be specified. As a rule, the continents are not clearly defined against the oceans and the sight-saving class teacher may re-color the continents in deeper shades. This may be done with India ink or with water colors. India ink may be obtained in six or eight colors. After the continents are colored, they may be outlined with black India ink.

Small Globes

Six-inch globes for individual use have been prepared in the same way. These are valuable because they may be carried to

the regular class room when necessary. The continents, of course, are very small and should not be used for any detailed work.

How to Make Relief Globes

Relief globes are very expensive, but a globe of this kind may be made very easily by the sight-saving class teacher and may prove helpful. Take an old globe, perhaps one which has been discarded by the regular class teacher, and glue a string around the outline of the continent. When this is dry, cover the continent in relief with putty. It will take several days for this to harden. The continent may then be colored and shellacked. If the shellac, after drying, gives too high a polish to the globe, it may be gone over again with flat varnish which leaves a soft dull finish. Flat varnish is a very good thing for a sight-saving class teacher to have on hand, for with it she is able to remove gloss from almost any painted or varnished surface.

Blackboard Globes

Blackboard globes may be had from a number of school supply firms. They are good for teaching zones and meridians. To draw the continent on a blackboard globe is a very difficult matter and is not extremely satisfactory, even after it has been accomplished, because with the mass of outline the children are often unable to determine which is land and which is water unless the oceans or the continents are colored. On some blackboard globes the ocean has been painted green or blue, leaving the continent in black. Chalk lines show equally well on either surface, but the blackboard globes are not a great asset until after this coloring has been done.

B. BLACKBOARD WALL MAPS

The blackboard wall map is probably the only map which can be used without great change. Two which are satisfactory are the Nystrom maps, Empire Series (75 x 56), and Progressive Series (50 x 54). These are made by A. J. Nystrom and Company, 2249 Calumet Ave., Chicago, Illinois. These maps are

available for all continents. There are a number of other wall blackboard maps, but a good many of these are spoiled for sight-saving class use because of the many lines of latitude and longitude in the background. Any map which has too many unnecessary lines on it should be avoided. Latitude and longitude may be indicated in the margin and connecting lines drawn when necessary. Avoid a checker-board effect in any map. Maps are drawn either with white or yellow lines on the blackboard cloth. The colors seem to be equally good. These maps should be used as a basis for one project at a time—rivers, for instance, or products, or cities. Too many features should not be put in at one time; the maps should be kept very simple. Colored chalks have proved valuable in their use in connection with this map.

Colored Wall Maps

Only a few of the ordinary colored maps are good for sight-saving class use. There is usually too much detail, and the colors do not contrast enough to show the difference between states, countries, and oceans. If a map of this sort must be used in a sight-saving class, it may be improved considerably by outlining with India ink. The best colored wall maps so far seen are the Atwood Series, put out by the Dobson-Evans Company, Columbus, Ohio, and the Rand-McNally maps, Columbia Series. These do not need any changes. The Rand-McNally Company will provide their maps without any printing if desired. A good small map (about 18″ x 24″) is Hart's History Aids. There are ten maps in the series, showing the growth of the United States from 1748 to 1919. These are put out by Bacon and Vincent Company, 49–51 E. Swan St., Buffalo, N. Y. These do not need to be changed in any way and are very helpful.

C. DESK MAPS

Because desk maps are small and easily handled they are very valuable to the sight-saving class child, since they can be carried to regular class recitations. One of the best types of desk maps for sight-saving class use are those put out by Milton

Bradley Company (Geographic Series 8049). In buying desk outline maps avoid any map which has lines of latitude or longitude drawn in the background. One set of maps seen had such lines meeting at a point representing the North Pole. While the outline of the continent was good, it was absolutely impossible to use the map as it was. If a map of this sort comes into a sight-saving class, it may be cut out and remounted on a plain sheet of paper. It is often good to use tan, blue, or green construction paper as a background. Most desk outline maps are improved if the outlines are made heavier.

No Map Drawing

No sight-saving class child should be required to use his eyes for the purpose of drawing maps. To meet the needs of such an assignment by the regular grade teacher the sight-saving class teacher can cut out a stencil of the map desired from dark-colored construction paper. A plain piece of white or cream paper may be clipped to the back of this stencil; the sight-saving class child then has a map on which he may note simple features. This paper may be replaced as often as is necessary; the outline of the stencil will serve for the production of many maps.

Materials for Coloring Maps

In coloring maps, India ink or water coloring has proved most satisfactory. Crayon, especially wax crayon, should never be used. It shows each stroke that is made; it does not give a smooth, even color, and has a glossy surface, which is most undesirable. India ink comes in all colors, as has been said. Liquid Tempera Colors (American Crayon Company) are very good and dry with a dull finish. In coloring maps the work should be so planned that the adjoining colors contrast—for instance, dark blue and purple should not come together.

Example of Map Making

One of the best maps produced during the summer course was based on a Finch Topography Map of the United States (Dobson Evans Company, Columbus, Ohio). This map is very simple, with a good color outline of the states in blue.

The map was held up to a window, and the outline of each geographic division traced on Tonal Paper (Milton Bradley and Company). For instance, the New England states were traced on green Tonal paper, cut out and pasted on the original map. The Atlantic states were cut out in the same way in yellow, the southern states in blue, etc. After each section was fastened on the states were outlined with black India ink. A map of this sort could be completed a section at a time as the class proceeds in geography. Unfortunately, the map of the United States is the only one of the series completed so far. They are splendid sight-saving maps, and it would be well to be on the watch for others of the series.

This same idea can be applied to almost any desk map. Using a Milton Bradley desk map as a pattern, a map of North America was made which showed Canada in yellow, the United States in green, and Mexico in red. The whole thing was mounted on gray construction paper and outlined with black India ink.

Silhouette Maps

Some sight-saving class teachers have found the silhouette map useful. It may be of black on white or white on black. One map of Ohio was cut from black and mounted on heavy white drawing paper. The capital was designated by a gold star, large cities were shown with dots of white ink, and the principal rivers drawn in white ink.

Other Materials for Maps

Light-colored window-shade cloth and sanitas, a dull finished oil cloth, have been used as a basis for maps by sight-saving class teachers. Blackboard cloth is good also, for it can be rolled up and carried to the regular class; with an outline painted in white, it may be the basis for a good many projects.

No Names on Maps

Do not write on the maps the names of states, cities, and rivers. A map prepared in this way is so confusing that the outlines are often lost. The best plan is to put a number near

the feature to be emphasized and below show by a key just what is meant. On the Finch map described above a small square of green was pasted in one corner and opposite were printed the words, "New England States." Other squares showed the names of the remaining sections. Make all lettering neat and clear. Mounting maps on construction paper will make them last longer. Well-mounted maps will last for several seasons if cared for properly. Large envelopes clearly labeled will help in cataloging and finding maps when needed.

POSTERS AND ILLUSTRATIONS

Limitations in Use of Pictures

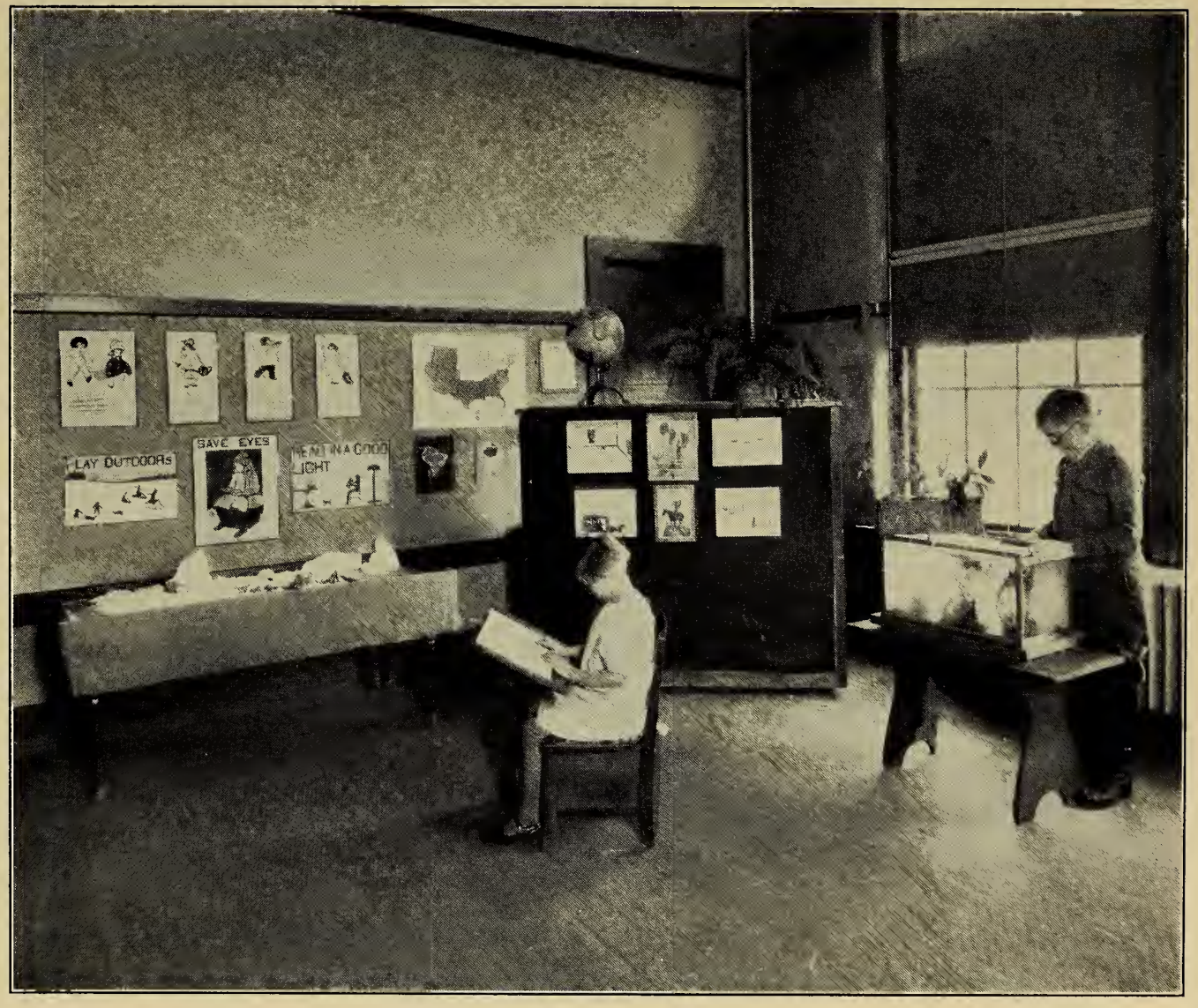
Teachers of normally sighted children depend a great deal upon illustrations to put over ideas presented in a text. The average school geography or history book contains many illustrations which make the subject a real, living thing to pupils. The sight-saving class children either do not see the pictures or get false conceptions of them because of the small size or the indistinct outlines. It is a very important part of a sight-saving class teacher's work to make it possible for pupils to have illustrative material.

Silhouettes

One of the earliest ideas along this line was the silhouette. Mother Goose Silhouettes (Flanagan and Company) were among the first pictures which were used without considerable change. With this idea as a basis, other silhouettes were made illustrating all types of activity. They are simple, with a minimum of detail, but they do not satisfy so far as color is concerned.

Use of Colors

There are a good number of sets of simple line drawings, such as Poster Patterns based on "Little Folks of Many Lands" (Milton Bradley), which may be colored by the sight-saving class teacher. Two sets, Birds to Color and Flowers to Color (Ideal School Supply Co., Chicago), are very good. They are considerably improved for sight-saving class use if outlined



Sight-Saving Class room at Sands School, Cincinnati, Ohio. Close-up of posters, maps, sand table showing Eskimo Scene, etc.

with India ink after coloring, and mounted on construction paper of harmonizing shade. The Ideal School Supply Company of Chicago has a number of built-up posters that are very good. There are sets entitled "Birds," "Flowers," "Child Life," and "Hiawatha." These consist of posters which are very simply outlined. In the package are a number of sheets of colored paper with corresponding outlines. These may be cut out and pasted on the original outline. For instance, in the posters of flowers the outline of the leaves is printed on the green paper. When they are cut out, the green leaves are then mounted on the background of the original poster. After building up some of these sets, the sight-saving class teacher can work out all sorts of ideas for herself.

Use of Cut-out Pictures

Another interesting project using pictures has been worked out in a sight-saving class. In the *Ladies' Home Journal*, *Good Housekeeping*, and several other magazines of this type, there are beautifully colored advertisements which show foods prepared ready to serve. These pictures were cut out, mounted, and outlined with India ink, each one on a separate sheet of construction paper. At one corner was printed very clearly a price, *i. e.*, on a picture showing an orange and a glass of orange-juice, the price, 5 cents, was placed; on another dish showing bacon and eggs the price, 15 cents, was written in the corner. These posters were put in the chalk tray around the room and were used to represent a cafeteria. The children in the sight-saving class chose their lunch for the day, one child being the cashier. Through the use of toy money a very splendid lesson was given in division and multiplication, as well as in the use of United States money. It takes some time to collect a set of posters of this sort, but they are extremely worth while and may be used in a number of different ways. The same set may be used as the basis for a lesson in hygiene.

Contrast Necessary

There are often pictures in the *National Geographic Magazine* which can be used for sight-saving class children. Care

must be taken that only clear, simple pictures are selected. One picture seemed almost hopeless at first, but it was made valuable for the sight-saving class children in a very simple manner. It was a picture of a white polar bear against the white snow. The contrast between the white of the animal and the white of the snow was not sufficient to be clearly seen by the children. The teacher simply outlined the bear with India ink so that the animal stood out very plainly. Another picture showed a snow-capped mountain against a sky. The contrast of the mountain top with the pale blue of the sky was not great enough for the children to see, and that, too, was outlined. Artistically this may be bad, but it is a great deal better to give the children some conception of these things than to deprive them of all pictures.

No Postcard Pictures Used

Postcards have no place in a sight-saving class. They are far too small, and are usually so poorly printed that they are often a source of eyestrain. Besides this, there are too many details, and while they play a very important part in a good deal of the class work with children of normal vision, the sight-saving class teacher should endeavor to provide pictures which are much larger and much more simple.

Where to Find Suitable Pictures

Keeping in mind that illustrations must be clear and simple, an ingenious teacher may find many suitable pictures for her class. They are found in the most unexpected places, and it is by being constantly on the alert, watching for sight-saving class material, that the best illustrations have been found. It is understood that all material of this sort is prepared by the sight-saving class teacher. Sight-saving class children should not use their eyes for the preparation of any pictures of this type. These illustrations are used just as similar material is used with normally sighted children.

SPECIAL ACTIVITIES

In addition to the work which is prescribed for any particular grade the sight-saving class teacher is required to carry on a

number of special activities. These, in some respects, do not bear any close relation to each other, but are more or less connected either with the work in academic subjects or in the health program for the children. For this reason they have been grouped together under the subject "special activities." There may be some question as to whether this designation is a proper one, but it is one which will probably be understood by the average teacher undertaking sight-saving class work.

A. MOTIVATED HAND WORK

Since the children in these classes are placed there because of their seriously defective vision, their eyes should be spared in every way possible. In other words, the use of the eyes should be limited to the essentials in education. By that is meant that if there is a choice between using eyes for reading and using eyes for some type of hand work the use of eyes in connection with the reading would be given preference. Children must use their eyes in order to read. They do not need to use their eyes in order to do a good many types of hand work which form a part of the sight-saving class activity, and hand work should be limited to those activities which require a minimum use of the eyes for close work.

Limitations Imposed by Poor Sight

For some time after sight-saving classes were established, it was thought that the type of hand work produced by blind children could be used satisfactorily. It is a well-known fact that no matter how little vision an individual may have, he will use that vision to the limit. At one time an attempt was made to teach sight-saving class girls to sew, in the same way as that in which blind girls are taught to sew, namely, merely by sense of touch. Theoretically this is possible, but in actual practice the sight-saving class girls at every opportunity used their eyes for their work. For that reason sewing for girls in sight-saving classes has been abandoned. The same thing is true with a good deal of the weaving. The strings which form the warp on the looms are a source of eyestrain, and the sight-saving class children, instead of using their fingers to feel the

under and over of the weaving thread, will bend their eyes close to the loom in their endeavor to see where to place the shuttle. Basketry, while it does not demand such close use of the eyes as sewing, still had no real reason for being introduced extensively into the hand work curriculum. It is interesting to make a basket, but nothing of great value is gained by a child in a sight-saving class in pursuing a course of several years in basket making. Very few children ever use their knowledge of basketry after they have left the elementary schools. Basketry for sight-saving class children has been defended on the basis of a hand training which it gives. There is something to be said for this and for the pleasure which the children derive from making a basket, but basketry should not be used merely as a means of keeping the children busy and to the exclusion of many other forms of activity which are equally profitable.

Must be Motivated

No hand work should ever be given to the children simply to keep them busy while other grades are reciting. In assigning any activity the sight-saving class teacher should always ask herself, "For what reason am I giving this hand work?" It should always be motivated in some way by the work which is taken along academic lines.

Use of Sand Table

The children in one sight-saving class room worked for a considerable length of time in preparing a sand table which represented the ideas they were getting from their geography lessons on Egypt. The boys brought in clay which they found on a hillside and spent some time in modeling the Pyramids and Sphinx. With the use of blue paper representing the river they built up the sand to show the course of the Nile. Other children modeled from plasticene the camels and some of the girls dressed clothes-pin dolls to represent the Arabs. Palm trees were made by winding brown crepe paper around sticks and at the top placing several long leaves cut from green crepe paper. These were placed in a most realistic manner along the

banks of the Nile. The project occupied several days, and in the end the children had a very good picture of the Nile valley. One of the older children made a contribution to this sand table by way of an obelisk on which he had placed hieroglyphics of his own manufacture. A sand table should be in use constantly. There should be a project in process of development at all times. The sand table should be an educational tool, not a plaything.

Posters

At the time the children were studying Columbus a number of very interesting posters were made in which even the smallest child had some part. On a sheet of construction paper they pasted a dark blue for water with a lighter blue above for sky, and on this ocean were placed the three little boats with the white sails outlined clearly against the sky-line. The posters were very effective, and the children had expressed their ideas. Wherever posters are made, cutting should be done free hand. It is surprising how adept the children become at this form of activity. Under no circumstances should sight-saving class children be required to use their eyes for close work with paints or crayons. Wherever they need a color it can be cut from a piece of colored paper, thus reducing the use of eyes considerably. Some of the children ask for titles and lettering on their posters, and to satisfy this demand they have been taught to do free-hand cutting of the alphabet. This is a very simple matter, easily taught, and a great delight to the children.

Manual Training

Some forms of manual training have been found to be excellent for both boys and girls of sight-saving classes. It must be understood in placing the sight-saving class children with the regular grades for manual training that they are not to be required to use their eyes for making drawings. In doing coping saw work, they should be allowed to follow a very heavy black pencil line.

Girls seem to take as much interest in manual training as do the boys. This may be accounted for somewhat by the fact that the sight-saving class girls do not take sewing.

Cooking Classes

Girls should take work in the cooking classes. In this each sight-saving class girl should have her own note-book, made from the wide-lined paper and with India ink copy into it such recipes as are necessary. The question of copying recipes from the blackboard is probably the only difficulty connected with the cooking work and that is easily solved in ways which have been indicated in other copying problems.

B. PHYSICAL TRAINING

For the most part sight-saving class children participate with the regular grades in physical training. However, this participation should be only upon the approval of the oculist who has charge of the child's eyes. For instance, most oculists do not wish children who are high myopes to take any bending exercises. These may cause an undue strain on the eyes and oculists have said that in extreme cases of myopia any sudden blow or strain may cause a detachment of the retina which may result in blindness. In addition to the work in the regular class it has been found that a certain amount of corrective gymnastic work is desirable. Where children have only one eye, their head is usually turned so that that eye comes to the center of the line of the body. This causes a twisting of the spine, usually making one shoulder and one hip higher than the other and brings about a strain throughout the whole body. Children who are near-sighted and who have the habit of bending over their work develop round shoulders and cramped chests. Often other forms of eye defect produce a corresponding defect physically, and it is through the help of a gymnasium teacher trained in corrective work that this faulty posture may be overcome.

C. EYE HYGIENE

It is not enough for the sight-saving class teacher to protect the eyes of her children in every way possible; she should so instruct them that, as they go through school, they may learn more and more how to take care of their own eyes. One of the best courses in eye hygiene which have been prepared for this purpose was written by Miss Olive Peck, Assistant Supervisor

of Sight-Saving Classes, Cleveland. This paper discusses in a very simple, interesting way the whole question of eyes. A child should not be allowed to become morbid on the subject. The question of eye hygiene with children of defective vision must be handled in such a way that the child may acquire the best eye habits and care. Children should not be encouraged to discuss their eye defects with other children, but they should be taught to recognize their limitations in the use of eyes, to recognize the necessity for straight, clean glasses, and to be so conscious of light that they will always place themselves in the best possible position when doing any reading or written work. This has a distinct bearing on the question of vocational guidance, which will be taken up later. Of course, it is obvious that no teacher can direct her children in this subject of eye hygiene without knowing something of eyes herself. It is essential, therefore, that the teacher take every opportunity to study eyes and to recognize from oculists' reports just what difficulty each child in her class is facing.

D. THE LUNCH HOUR

Lunches Desirable

The children in sight-saving classes usually come from long distances, and it is seldom that any group is able to go home at lunch time. When one considers that eyes often reflect in their diseased condition, the condition of the body, it becomes apparent that the question of nutrition is an important one for sight-saving class children. Nothing can be more dismal than for children to eat a cold lunch in some of the dark basements where they are sometimes sent at noon hour. Where a lunch is obtainable in the building the sight-saving class children can get their lunch in just the same way as do other children who attend that school, but frequently there are no such facilities. It then becomes necessary to install in the cloak room an electric hot plate, with enough dishes, pots, and pans, to cook and serve at least one warm dish for the children's lunch. Usually the teacher, or the older pupils, boys and girls alike, take care of the cooking. The ideal way to handle the situation would be to cook one warm, nourishing

food, allowing the children to supplement this with sandwiches or fruit brought from home.

How to Prepare and Serve Lunch

At noon hour the table in the room is set by some of the children. In this the small children may participate, and learn to set the table very nicely, while the older pupils are preparing the food. At the proper time the children place their lunches on the plates. No paper bags and bundles should be brought to the table. The teacher then serves the warm food and all eat together. After lunch is finished the children again take charge, clearing the table, washing the dishes, and making everything ready for the afternoon sessions. This is not as complicated as it would seem, and where it is made a particular privilege to participate in the preparation of lunches, or in clearing the dishes afterward, the children are very anxious to have an opportunity to do these things. It will be found that the children are usually very grateful for the chance to have something warm at noon hour.

What to Prepare

The easiest things to cook, of course, are the canned soups, which are very nourishing, but soup should not be given every day of the week. The children like boiled rice, macaroni with cheese or tomatoes, tapioca pudding, boiled potatoes with plenty of butter, and cocoa. In one school the children enjoyed having milk toast at noon. Naturally, emphasis should be placed on milk and green vegetables in the diet of every child. In choosing food for the noon hour two things must be kept in mind: that it should be nourishing and easy to prepare. The child who will not eat this, that, and the other kind of food is the topic of much discussion among sight-saving teachers who are dealing with the lunch problem. Public opinion in the shape of their own parents has probably made them critical of food. Children are good imitators in this respect and often reflect the ideas which are held at home. Public opinion can be just as strong at school. If the teacher and the rest of the children are eating a certain dish, it becomes

"quite the thing" to do, and the reluctant one usually falls in line. It is a good idea to have the children suggest a menu for the week and after they have agreed on certain dishes, the teacher may tactfully introduce new ones.

Other Lunch Hour Activities

The noon hour may easily be made the most delightful period of the whole day. Gathered around the table the children lose the formal attitude which they are so apt to assume with the teacher, and the whole group are just good friends. At that time they tell of their experiences at home and with each other, and it is most valuable for the teacher if she can develop such a sense of freedom among the children that through it she is able to find out many things from her group which she in no other way could get. It is also an opportune time for observing the table manners of the children. Any corrections which are necessary along this line should be done privately after the lunch hour is over. The children really are learning a great deal that is valuable as well as getting the nourishment which they need.

PLAN OF CONDUCTING HIGH SCHOOL CLASSES

Sight-saving classes were first established in the elementary grades, and it is only within the last few years that there have been a considerable number of children from these classes entering high schools. As the child goes along in the grades he should be released more and more from the close supervision which the teacher has given to his eyes and should be taught to assume complete responsibility for himself. This should be done gradually so that at graduation from high school the sight-saving class child should be perfectly sure of his own eye condition and should be in position to take care of himself. For this reason in some schools there has not been established a regular sight-saving class room in a high school, but the sight-saving class children are seated in the home rooms with the children of normal vision and are under the direct charge of a conservation-of-vision teacher who has had high-school experience.

Student Readers

Each sight-saving class child in this group is provided with a student reader. This reader is a member of the same class as the child with defective vision and is taking exactly the same course of study. These student readers are paid in one city twenty cents an hour for their services. They read aloud all of the assigned lesson material from the small type text-books. Where necessary, they do any copying which is required by the sight-saving class child. In other words, they act as eyes for the child with defective vision. These student readers are chosen on the basis of their standing in academic work. Preference is always given to children who may be helped through high school by the money which they may earn in this way.

Preparation Work

Assigned work is done at the school under the supervision of the sight-saving class teacher. This group meets immediately after the close of school, and under the proper lighting conditions prepares all work for the next day. When he leaves the building, not only is the sight-saving class child prepared for the next day, but the reader having the same assignments as the sight-saving child has his own work prepared as well, and it is not necessary to do any home work under conditions which cannot be controlled.

In the smaller towns, where there are only one or two sight-saving class children in high schools, the same reader system may be used, but the work is supervised by the sight-saving class teacher in charge of the elementary class.

VOCATIONAL GUIDANCE

From the beginning the sight-saving class child must be instructed regarding his own eye condition, and should be taught, in the light of that, to think of the things which he may be able to do after he is out of school. It is not possible, with small groups of sight-saving class children, to give actual vocational training. What is done must be more in the nature of guidance along lines which are suited to the children. Where there are vocational schools connected with the public school system,

there can be coöperation between the department for sight-saving and the vocational education department, so that such vocational training as can be taken without aggravating eye conditions may be opened to sight-saving class children. It is obvious that no sight-saving class child should be sent to a printing trades school, but depending upon eye condition, could be sent to the automotive trades school or to an agricultural school. In the latter, microscopic work is not possible for sight-saving class children, but other activities might be substituted. A course in salesmanship might be profitable.

Limitations as to Choice of Vocation

No hard and fast rules for vocational guidance can be laid down, but, taking into consideration the eye condition of the child and his natural vocational tendency, some plan may be worked out whereby the child may follow his ideas in some field or other. Myopes, for instance, should be encouraged to take up out-of-door activities and guided away from close office work. This is often a very difficult thing because the near-sighted child is able to do close work most easily. It is a fact, however, that any close work done by a myope is likely to be at the expense of his eyes and to increase his difficulties.

Coöperation with Vocational Guidance Department

It must be emphasized that the whole problem of vocational guidance is an individual matter. A good deal of help may be had from those in charge of the regular vocational guidance work in the schools, and from books on vocational guidance. The point must always be kept in mind, however, that the eye conditions limit occupational possibilities. It is encouraging that, after working with these children, teaching them about their eye conditions and discussing with them the various types of work which they are able to do, how they often solve their own vocational problems and at graduation come to the sight-saving teacher saying, "I've got a job." Most frequently the work which they find for themselves is that which satisfies them and which takes into consideration their eye condition. This, of course, is not always true. There will al-

ways be children who are misfits, and in spite of any training tend to pursue the wrong course.

Sight-saving class children are very much like any other group of children. They are swayed in their choice by parents, teachers, and other children. The sight-saving class teacher's job comes in reconciling the work chosen with the eye condition of the boy or girl. Long lists of occupations suitable for sight-saving class children are only suggestive.

Doubtless the best plan is to let the child suggest the type of work he prefers and then let the sight-saving class teacher adapt that idea to his eye condition. Vocational guidance is a big responsibility. Sight-saving class children should be urged, at every opportunity, to consider the type of work they wish to undertake, and constantly the "eye" element should be brought to their attention. It is not necessary to have formal lessons on the subject, but as the child progresses, particularly in the junior and senior high schools, he hears the subject discussed and it is at this point the sight-saving class teacher can be most helpful in presenting modifications of any plan which does not take into consideration eye handicaps.

Since many children in sight-saving classes, as is the case in regular grades, will leave school before reaching the higher grades, the teacher must become thoroughly conversant with the probable school life expectancy of each child. She can then be prepared to give vocational advice when it is most needed.

RECORDS AND REPORTS

The sight-saving class teacher comes closer to her children possibly than any regular teacher in public school work. She has these children through a number of grades. She becomes conversant with their mental and physical conditions. She knows a good deal more about family and home conditions than the regular public school teacher probably would have time and opportunity to learn. The knowledge which she has is very valuable in taking care of eyes and planning school work, and in the matter of vocational guidance. It is essential that teachers of these children should keep complete records of all the information having a bearing upon eye conditions and

education. This is especially necessary in order that with a change of teachers the new teacher may have all this information available. Children should be visited in their homes at least twice a year and some of the more difficult cases should be visited many times. Home calls should always be friendly. When there are any complaints to be made, it is usually wise to have the parents come to the school. A record should be kept of each visit, so that as other teachers take up the work as the years go by, any reference to conditions in the past may be verified. Every sight-saving class teacher should have a folder or envelope for every member of her class. In this she should keep the following reports:

(1) Report of eye condition.
(2) Mental test.
(3) Record of home visits.
(4) Reports of school progress.

Annual Examination by Oculist

An eye record should be made each year by an oculist. This should be done regularly, so that any changes in eye condition may be noted. Where eyes improve above the standards for admission to the class, the child may be sent back to the regular grade. Where any deterioration is noted, the sight-saving class teacher must find out immediately where the trouble lies and help to remedy it.

Mental Tests

Mental tests are sent out from the Psychological Laboratory by the psychologist who makes the tests. Often there is only one test made at the time the child enters the sight-saving class, but if it should so happen that the report places the child on the border line it will be well to have subsequent mental tests made.

Regular School Records

The usual school records should, of course, be kept. Sometimes these records are required to be filed in the school principal's office. In that case the sight-saving class teacher

should keep a duplicate copy, so that in any case it will not be necessary to go through files or bundles to hunt out the past record of any one of her group. As a child progresses in school his folder will contain a fairly full account of his progress and history, and it will be extremely helpful when a new teacher takes up the work or when a child is transferred from one class to another.

IDEAS IN THIS PUBLICATION ARE TENTATIVE

In closing, the statement which was made in the beginning should be repeated. These ideas are intended merely as suggestions. They are only tentative. Many new ideas are being formulated, but it is hoped that from this beginning enough suggestions and comments will come to make a very complete statement of the methods of teaching sight-saving classes.

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SIGHT SAVING CLASSES IN SCHOOL SYSTEMS*

What are Sight Saving Classes?

Classes established in public and private school systems for the education of children who, because of seriously defective vision, cannot be profitably educated in the regular grade.

Why Should not such Children be Educated in Schools and Classes for the Blind?

The two systems of education are different: for blind children, the chief avenue of educational approach is tactile; for sighted children, it is visual.

How are Sight Saving Classes Valuable?

They are valuable to:

1. *Handicapped children:* by giving educational advantages to children with seriously defective vision while saving their sight.
2. *Normally sighted children:* by relieving the grade teacher of the necessity for devoting a disproportionate amount of time to handicapped children.
3. *The educational system:* by relieving the system of those repeaters who have failed to make their grade because of defective vision.
4. *The state:* by investing in children who will become an asset rather than a liability to the community.

What Children are Candidates for Sight Saving Classes?

In general children whose vision ranges between 20/200 and 20/70, together with children suffering from progressive eye troubles.

*Prepared by the National Committee for the Prevention of Blindness, Inc., 370 Seventh Avenue, N. Y.

Where may Detailed Standards be Obtained?

The National Committee for the Prevention of Blindness, 370 Seventh Avenue, New York, will furnish standards used in various cities on request.

How Much Eye Work are Sight Saving Class Children Permitted to do?

The amount is determined by the oculist in relation to the eye difficulty from which the child is suffering. Oral instruction is emphasized,

What Proportion of Children Require this Specialized Form of Education?

About one child in every five hundred of the school population. In districts where insanitary conditions exist, the proportion is usually higher.

How Many Children may be Profitably Educated in a Sight Saving Class?

The number of children depends chiefly upon the number of grades represented. Where there are not more than three grades in a class, sixteen children may be cared for. An increase in the number of grades requires a corresponding decrease in the number of pupils.

What are the Essential Physical Arrangements of a Sight Saving Classroom?

Adequate lighting, natural and artificial, without glare; dull, matt surface on walls, woodwork, desk tops, blackboards, paper, etc.

What Special Equipment is Necessary?

Movable, adjustable seats, adjustable desks, tables and chairs, typewriter and stands, clear-type books, unglazed paper, educational models, charts, special mats, special globes, adequate cupboards for large size books, paper, etc., equipment for motivated handwork.

What is the Generally Accepted Method of Conducting Sight Saving Classes?

The work is co-ordinated with that of the regular grade. Work requiring close use of the eyes is done in the special class under the guidance of the special teacher, the use of the eyes being prescribed by an oculist in consultation with the supervisor. Oral work, gymnasium exercises, rote singing, etc., may be taken in the regular grade.

How are Sight Saving Classes Financed?

Since the state makes education compulsory, it should be responsible for its share of the financial burden. Appropriations should be made for the education of physically handicapped children in accordance with the educational laws of the state. Appropriations may be withheld when standard requirements are not met.

Experience has shown that it is sometimes difficult to obtain financial assistance from the state until the need of sight saving classes has been established by the local community. In some instances state subsidies providing for other types of classes may, without special legislation, be extended to communities maintaining sight saving classes.

How may Further Details and Assistance Regarding Sight Saving Classes be Obtained?

The National Committee for the Prevention of Blindness, believing that sight saving classes are among the most important ways of conserving sight and preventing blindness, offers its service, and where necessary, will send a member of its staff experienced in this work to any community for legislative or educational work looking to the establishment of such classes.